

Remarks

The Advisory Action mailed June 19, 2007 and the Final Office Action mailed March 22, 2007 have been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1, 3-5, 7-22, and 24-31 are now pending in this application. Claims 1-5 and 7-31 stand rejected. Claims 2, 6, 23, and 32 have been canceled.

Applicants and the undersigned wish to express their appreciation to the Examiner for the courtesies he extended during a telephone interview that occurred on August 17, 2007. During the interview, Applicants' representative Andrew Kefalonitis Jr. discussed with the Examiner proposed amendments to independent Claim 1 to further differentiate Applicants' invention from the cited prior art references, namely, U.S. Patent No. 5,875,430 to Koether and U.S. Patent No. 4,580,276 to Andruzzi, Jr. et al. The foregoing amendment has been made in consequence of the interview.

The rejection of Claims 1-5 and 7-31 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,875,430 to Koether (hereinafter referred to as "Koether") in view of U.S. Patent No. 4,580,276 to Andruzzi, Jr. et al. (hereinafter referred to as "Andruzzi") is respectfully traversed.

Applicants respectfully submit that neither Koether nor Andruzzi, considered alone or in combination, describes or suggests the claimed invention. As discussed below, at least one of the differences between the cited references and the present invention is that no combination of Koether and Andruzzi describes or suggests a method of performing service diagnostics on appliances that includes connecting a diagnostic interface to a plurality of appliances, *each of the plurality of appliances in direct communication with the diagnostic interface via a power line carrier.* (Emphasis added.)

Applicants also respectfully submit that neither Koether nor Andruzzi, considered alone or in combination, describes or suggests a method of performing service diagnostics on

appliances that includes performing a service diagnosis of the at least one appliance through the diagnostic interface *over the power line carrier* using service functions in the at least one appliance. (Emphasis added.)

Applicants also respectfully submit that neither Koether nor Andruzzi, considered alone or in combination, describes or suggests a method of performing service diagnostics on appliances that includes implementing the diagnostic interface *within a single device including a display and a power line carrier modem configured to modulate data to communicate the data over the power line carrier*. (Emphasis added.)

Koether describes a plurality of kitchen base stations (150) each in communication with at least one appliance (A) within a cell. Each kitchen base station (150) wirelessly interrogates a corresponding controller (140) of an appliance (A) within the cell. Kitchen base stations (150) are connected to a control center (170) through high speed communication links of a data network (180). Data network (180) may be an integrated system digital network (ISDN) facility. Diagnostic information is communicated to the control center (170) over the data network (180). Each kitchen base station also includes a microprocessor (167) that controls a plurality of activities of the base station and communications between an appliance and a corresponding kitchen base station. Decisions are made by the microprocessor (167) in accordance with data received over the data network (180) from the control center (170). The microprocessors (167) of the kitchen base stations (150) are connected to a terminal keyboard and display unit (155) that allows a user to exchange information with the appliances as well as exchange information with the control center (170) over the data network (180). Notably, Koether describes that the microprocessor (167) of the base station (150) and the control center (170) are connected over a data network (180) and diagnostic information is exchanged and decisions are made by a combination of the microprocessor (167) and the control center (170).

Andruzzi describes an amplitude-shift keying/frequency-shift keying (ASK/FSK) data encoding and transmission scheme. Data is exchanged in bidirectional fashion (half-duplex)

within a localized transmission medium defined by the electrical distribution system (metallic conductors) of a building, house, or any localized residential/commercial complex.

Claim 1 recites a method of performing service diagnostics on appliances including “connecting a diagnostic interface to a plurality of appliances, each of the plurality of appliances in direct communication with the diagnostic interface via a power line carrier; accessing at least one appliance of the plurality of appliances; performing a service diagnosis of the at least one appliance through the diagnostic interface over the power line carrier using service functions in the at least one appliance; implementing the diagnostic interface within a single device including a display, a processing circuitry generating service commands to perform the service diagnosis, and a power line carrier modem configured to modulate data to communicate the data over the power line carrier; and servicing, by the diagnostic interface, the at least one appliance via the power line carrier, said servicing comprising at least one of adjusting a characteristic of the at least one appliance and displaying to a technician the service diagnosis.”

Neither Koether nor Andruzzi, considered alone or in combination, describes or suggests a method of performing service diagnostics on appliances, as recited in Claim 1. More specifically, neither Koether nor Andruzzi, considered alone or in combination, describes or suggests a method that includes connecting a diagnostic interface to a plurality of appliances, each of the plurality of appliances in direct communication with the diagnostic interface via a power line carrier. Rather, in contrast to the recitations of Claim 1, Koether describes a controller (140) that wirelessly communicates with a kitchen base station (150), which communicates with a control center (170) over a data network (180). More specifically, rather than direct communication between a plurality of appliances and the diagnostic interface via a power line carrier as recited in Claim 1, Koether describes a kitchen appliance (110) and a kitchen base station (150) that each include an RF transmitter (120) and an RF receiver through which they communicate wirelessly.

Further, rather than performing a service diagnosis of the at least one appliance through the diagnostic interface and servicing by the diagnostic interface the at least one

appliance as recited in Claim 1, base station (150) of Koether operates in combination with a control center (170), which communicates with kitchen base stations (150) through communication links (175) of a data network (180). Each kitchen base station (150) interrogates a corresponding controller (140) and the controller (140) transmits diagnostic information relating to the operating conditions of the kitchen appliances (110) wirelessly to base station (150). Base station (150) then communicates this information to the control center (170) through communication links (175) of the data network (180). Also, in contrast to the recitations of Claim 1, Andruzzi describes an electrical system transporter that may function along the lines of a common power-line carrier system and exchange data among a master modem and a plurality of slave modems, which are connected to separate electronic devices or appliances.

Applicants agree with the assertion at page 5 of the Final Office Action dated March 22, 2007 that “Koether does not expressly disclose wherein the diagnostic interface includes a power line carrier modem within the diagnostic interface.” However, Applicants disagree with the assertion at page 6 of the Final Office Action dated March 22, 2007 that “[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of these references since Andruzzi discloses that a power line carrier system using modems enables bi-directional data to be communicated within a building via a power line carrier to various devices including appliances within a local area network.”

A power line carrier system includes a fundamentally different communication architecture than an RF communication system. A power line carrier system advantageously limits communications to the appliances coupled to the power line on one side, and the transformer on the other side. In use, a power line carrier system also costs less, which would allow use in residential applications, rather than the commercial applications described by Koether.

It is also submitted that Koether “teaches away” from using wired connections. If art “teaches away” from a claimed invention, such a teaching supports the nonobviousness of the invention. U.S. v. Adams, 148 USPQ 479 (1966); Gillette Co. v. S.C. Johnson & Son, Inc.,

16 USPQ2d 1923, 1927 (Fed. Cir. 1990). In light of this standard, it is respectfully submitted that the cited art, as a whole, is not suggestive of the presently claimed invention. Moreover, Applicants respectfully submit that Koether teaches away from a wire interconnection between a diagnostic interface and an appliance as recited in Claim 1.

Specifically, as discussed above, Koether describes an appliance (110) that includes a controller (140) that is in wireless communication with a base station (150), which is in communication with a control center (170) over a network. Koether also describes at column 5, lines 13-19 that “[w]ire interconnections are not desirable, due primarily to the likelihood of such wires being inadvertently cut by culinary instruments.” This statement teaches away from the recitations of Claim 1 that each of the plurality of appliances is in direct communication with the diagnostic interface via a power line carrier. Koether also states that “[i]t should, however, be understood that wire interconnections may be used.” Applicants submit that although Koether describes wire interconnections, Koether also criticizes, discredits, and discourages others from including a wire interconnection when performing service diagnostics on appliances. As such, neither Koether nor Andruzzi, considered alone or in combination, describes or suggests “performing a service diagnosis of the at least one appliance through the diagnostic interface over the power line carrier,” as recited in Claim 1. Accordingly, Applicants respectfully submit that the cited art as a whole teaches away from the method as recited.

Further, neither Koether nor Andruzzi, considered alone or in combination, describes or suggests a method that includes implementing the diagnostic interface within a single device including a display, processing circuitry generating service commands to perform the service diagnosis, and a power line carrier modem configured to modulate data to communicate the data over the power line carrier. Rather, in contrast to the recitations of Claim 1, Koether describes that diagnostic decisions are made by a microprocessor (167) within a base station (150) in accordance with data received from a control center (170) over a data network (180). Further, the base station (150), which in the Office Action is equated to the diagnostic interface of the current application, does not include a display. The base station (150) is connected to a terminal keyboard and display unit (155). In further contrast

to the recitations of Claim 1, Andruzzi describes a transmission scheme functioning along the lines of a common power-line carrier system, wherein data is exchanged in bidirectional fashion (half-duplex) within a localized transmission medium. However, Andruzzi does not describe implementing a diagnostic interface for appliances within a single device that includes a display and a power line carrier modem.

Accordingly, Applicants respectfully submit that Claim 1 is patentable over Koether in view of Andruzzi.

Claims 2-5, 7-11, 30, and 31 depend from independent Claim 1. When the recitations of Claims 2-5, 7-11, 30, and 31 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2-5, 7-11, 30, and 31 likewise are patentable over Koether in view of Andruzzi.

Claim 12 recites a diagnostic interface for performing service diagnostics on appliances including “a display for viewing diagnostic and service information; processing circuitry for generating service commands for an appliance; and a power line carrier communication interface configured to be directly connected to a plurality of appliances, wherein said power line carrier communication interface facilitates transmitting the service commands to the plurality of appliances and receiving appliance diagnostic results on a power line carrier communication system, and said diagnostic interface implemented within a single device including said display, said processing circuitry generating the service commands to service at least one appliance of said plurality of appliances, and said power line communication interface configured to modulate data to communicate the data over an alternating current (AC) power line, wherein said diagnostic interface configured to service the at least one appliance via said power line carrier communication interface by at least one of adjusting a characteristic of at least one appliance and displaying to a technician the appliance diagnostic results.”

Claim 12 recites a diagnostic interface configured to perform steps essentially similar to those recited in Claim 1. Thus, Applicants submit that Claim 12 is patentable over Koether in view of Andruzzi for reasons that correspond to those given with respect to Claim 1.

Accordingly, Applicants respectfully submit that Claim 12 is patentable over Koether in view of Andruzzi.

Claims 13-21 depend from independent Claim 12. When the recitations of Claims 13-21 are considered in combination with the recitations of Claim 12, Applicants submit that dependent Claims 13-21 are also patentable over Koether in view of Andruzzi.

Claim 22 recites a diagnostic system for providing access to service diagnostics on an appliance including "a plurality of appliances; a diagnostic interface configured to be directly connected to said plurality of appliances, said diagnostic interface comprising a display, wherein said diagnostic interface facilitates accepting service diagnostics commands destined for at least one appliance of said plurality of appliances, said diagnostic interface implemented within a single device including a display device, a microprocessor configured to generate the diagnostics commands, and a power line carrier modem configured to modulate data to communicate the data over an alternating current (AC) power line, wherein said diagnostic interface configured to service the plurality of appliances via said power line carrier modem by at least one of adjusting a characteristic of at least one appliance and displaying to a technician the diagnostics commands; and a dedicated appliance controller for receiving and executing the diagnostics commands."

Claim 22 recites a diagnostic system comprising, among other things, a diagnostic interface configured to perform steps essentially similar to those recited in Claim 1. Thus, it is submitted that Claim 22 is patentable over Koether in view of Andruzzi for reasons that correspond to those given with respect to Claim 1.

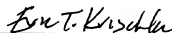
Accordingly, Applicants respectfully submit that Claim 22 is patentable over Koether in view of Andruzzi.

Claims 24-29 depend from independent Claim 22. When the recitations of Claims 24-29 are considered in combination with the recitations of Claim 22, Applicants submit that dependent Claims 24-29 are also patentable over Koether in view of Andruzzi.

For at least the reasons set for above, Applicants respectfully request that the Section 103 rejection of Claims 1, 3-5, 7-22, and 24-31 be withdrawn.

In view of the foregoing amendment and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully submitted,



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